

THE ESTATE OF ERIK A. POWELL, etc., et al. v. CITY AND COUNTY OF
HONOLULU

U.S. District Court for the District of Hawaii
Civil No. CV04-00428 DAE-LEK

EXHIBIT "33c"



October 3, 2006

Emily Waters
c/o Law Office of Ian Mattoch
Suite 1835, Pacific Guardian Center
737 Bishop Street
Honolulu, Hawaii 96813

Re: Powell, Laughlin, et al. vs. City and County of Honolulu

Dear Ms. Waters:

As you requested, I have reviewed the file material your office provided me concerning the drownings of Eric Powell and James Laughlin (i.e. referred to herein as the Powell/Laughlin incident) wherein both men drowned while snorkeling at Hanauma Bay. In addition, I also visited the site of the Powell/Laughlin incident wherein I made a number of observations concerning the Hanauma Bay area and beach including Witch's Brew, the area within Hanauma Bay where Mr. Powell and Mr. Laughlin drowned. It should be noted that I was familiar with Hanauma Bay prior to my inspection for the purposes of this matter in that I had snorkeled there on several occasions in the past. Based on this information, my training, experience, and expertise I conducted a Risk Management Analysis of the Hanauma Bay operations as it pertains to the Powell/Laughlin incident. My findings and conclusions are summarized below.

I base my findings and opinions on: my training, experience, and expertise in the field of Human Factors Engineering, the observations made at the time of my site inspection, as well as previous visits to Hanauma Bay, and the various file material pertaining to this case that your office provided. The material I reviewed and/or investigations undertaken that were specific to the facts of this case included:

1. Miscellaneous photographs taken by the Powells/Laughlin;
2. Map of Hanauma Bay;
3. Time Line;
4. Sun and Moon Data for July 19, 2002;
5. Weather History for July 19, 2002;
6. Surf Data for July 19, 2002;
7. Fire Department Incident Report;
8. Police Department Incident Report;
9. Autopsy Report for Mr. Powell;

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10. Autopsy Report for Mr. Laughlin;
11. Miscellaneous Newspaper Articles;
12. Miscellaneous TV News Clips;
13. Video Tape of Hanauma Bay shot on 10/9/03;
14. Miscellaneous photographs of Hanauma Bay taken on 10/9/03;
15. Queen's Medical Center Records;
16. City and County of Honolulu's Response to Plaintiff's First Request for Production of Documents;
17. City and County of Honolulu's Response to Plaintiff's First Interrogatories;
18. City and County of Honolulu's Supplemental Response to Plaintiff's First Request for Production of Documents;
19. Ocean Safety and Lifeguard Service Division Supervisor's Report;
20. Deposition of Mrs. Powell;
21. Deposition of Mr. Bregman;
22. Deposition of Mr. Goodwin;
23. Deposition of Mr. Dorr;
24. Deposition of Mr. Moses;
25. Deposition of Mr. Neves;
26. Discussions with Dr. Lukas;
27. Discussion with Mr. Ebro;
28. Prior personal experience with Hanauma Bay;
29. Visitation/inspection of Hanauma Bay.

This report is based on the information that is available to date. It is my understanding that discovery is continuing in this matter, thus I reserve the right to further expand and/or amend my opinions and their bases if additional information relevant to my area of expertise becomes available.

Attached as an exhibit to this report is a copy of my CV that highlights my training, experience, and expertise as it pertains to safety and risk management, along with a list of my publications. Also attached is a listing of my sworn testimony for the past 5 years. Please note that my fees for work on this matter, including trial, is \$300/hour plus expenses; deposition fees are \$350/hour, unless paid in advance, with a minimum charge of \$1,000. Commercial travel time is billed at half-rate.

I have a Ph.D. in Mechanical Engineering – Human Factors Option; I have 30 years of experience in Human Factors with my emphasis being in safety and risk management. I have done theoretical work in the area of safety and specifically warnings, as well as provided consulting services to private industry and businesses in the field of safety and risk management. Also, as noted in my CV, I am board certified in Human Factors.

RISK MANAGEMENT ANALYSIS

Overview

In order to ensure the safety of visitors, the general public, and employees alike, a governmental agency such as the City and County of Honolulu must employ some type of basic safety or risk management program. To be effective at minimizing the potential

harm to people, any risk management program must be comprised of five basic components: Hazard Analysis, Plan Development, Plan Implementation, Plan Evaluation, and Documentation. Each of the steps and how they relate to Powell/Laughlin incident are discussed in the following sections.

Hazard Analysis

A hazard analysis is a process whereby the various foreseeable tasks performed by the user (i.e. the manner in which the person interacts with the facility or system) are analyzed to identify potential hazards under the varying environmental conditions that exist where these tasks are accomplished. In the case of the Powell/Laughlin incident, the relevant tasks would be those associated with visitors that are swimming/snorkeling in the bay. In particular is the concern for drowning, particularly given that a vast majority of the visitors to Hanauma Bay are tourists with limited knowledge of ocean hazards, most of whom have limited, if any, snorkeling experience.

A hazard analysis is comprised of two key components: an a priori analysis (i.e. one that is performed before there is an accident or near miss) and a post hoc analysis (i.e. one that is performed after there is an accident or near miss). It is not the intent of this report to delve into the details of a comprehensive hazard analysis, nor would it be particularly fruitful to do so. Notwithstanding, the relevant issues as they pertain to the Powell/Laughlin incident for each type of analysis are:

A Priori

1. The initial view visitors have of Hanauma Bay is from high above the bay; from that distance the ocean, particularly in the bay area where people are swimming/snorkeling, the water/bay appears tranquil and peaceful. This reinforces a preexisting schema (i.e. mental model or expectation) that this is a public beach that should be safe for swimming/snorkeling.
2. As visitors descend to the beach area this schema is reinforced by several factors such as the large number of people who are swimming/snorkeling, the wide range of ages of people (i.e. from infants to the elderly) and the presence of lifeguards, including lifeguard towers.
3. The water in the immediate area of the beach is relatively calm and tranquil compared to the outer reef and areas such as Witch's Brew; however, unbeknownst to most visitors (i.e. mostly tourists) this is due to a number of factors such as the direction/magnitude of the winds, currents, and swells, as well as the protection afforded by the outer reef.
4. The presence of the lifeguard towers and lifeguards create a false sense of security.
5. When the water is choppy and rough such as the day of the Powell/Laughlin incident, the lifeguards cannot continuously observe swimmer/snorkelers as they are bobbing up and down in the water.

6. The significant number of prior drownings at Hanauma Bay put the City and County of Honolulu on notice of the hazardous conditions that were not being effectively mitigated. For example, in the 4 months prior to the Powell/Laughlin incident, there were 7 drownings in Hanauma Bay. To put that in perspective, there were a total of 7 drownings in all of Oahu's beaches staffed with lifeguards, less Hanauma Bay, in all of 2002.
7. Lifeguarding in Hanauma Bay is particularly challenging in that the most people are there to snorkel, an activity in which they lay face down in the water for extended periods of time and remain relatively motionless.
8. The large expanse of the bay both longitudinally (i.e. parallel to the beach) and particularly in depth (i.e. distance off the beach) contribute to the attraction to snorkel on the outer reef and sense of protection created by having shores on both sides.
9. Ms. Powell testified that she did not perceive any dangers or hazards associated with Hanauma Bay; this reinforces the fact that the hazards associated with Hanauma Bay are effectively hidden from the novice user.
10. Captain Soo acknowledged that visitors are attracted to Witch's Brew.
11. Acting Captain Khrono noted that the Witch's Brew area has strong currents and is dangerous.
12. Via Dr. Lukas' analysis:
 - a. Once a swimmer/snorkeler gets into the Witch's Brew area, there are no good options for escape.
 - b. Even as an expert diver, he found it challenging to get back out of the Witch's Brew area.
 - c. Even on a surfboard he was afraid to venture into the end of Witch's Brew given the waves and current were so strong and erratic.
 - d. The hazard associated with Witch's Brew is not apparent.
13. Lifeguard Bregman testified that:
 - a. Hanauma Bay is a very challenging area to be a lifeguard.
 - b. Tourists are encouraged to go to Hanauma Bay and many are told they need not know how to swim.
 - c. Witch's Brew is dangerous if the trades are blowing or if there is a northeast swell (i.e. such as the day of the Powell/Laughlin incident).
14. Lifeguard Goodwin testified that:
 - a. Lifeguarding at Hanauma Bay is challenging as there are a lot of inexperienced people who are there to snorkel.
 - b. When the water is rough (i.e. such as the day of the Powell/Laughlin incident) the outer reef is closed because it is too hazardous. But as

discussed below, it is clear that the City and County of Honolulu failed to do so on the date of the Powell/Laughlin incident.

15. Lifeguard Dorr testified that:

- a. Hanauma Bay is difficult to lifeguard because it is crowded and all the swimmers are face down in the water.
- b. If the swimmer/snorkelers remain motionless for 30 seconds then a rescue is initiated.

Post Hoc

1. If a post hoc analysis is to be effective in improving safety it is absolutely mandatory that any and all accidents and/or near misses be thoroughly and properly investigated by trained and knowledgeable investigators. The investigations must be properly documented, including photographs and interviews of the victim(s), any/all potential witnesses, and in incidents such as drownings on a public beach there should be in-depth interviews of the lifeguards and rescue personnel. Lastly, the accident reports must be analyzed individually and then reviewed as a group to identify commonalities and potential patterns, by trained professionals to determine the root cause(s) of the accident(s).
2. It is absolutely critical that the underlying root cause(s) be identified so that corrective action can be implemented; falsely attributing the failure mode ensures that needless similar accidents will be repeated over and over. It should also be noted that this is a serial process from being to end; compromise any single step of the process and the overall process will fail. In this case, the evidence is irrefutable that City and County of Honolulu's risk management program failed at the very beginning. That is, in their answers to interrogatories, the City and County of Honolulu acknowledged that there was no post hoc investigation, not even an interview of any of the lifeguards that were on duty at the time of the Powell/Laughlin incident. The failure of City and County of Honolulu to have essentially no post hoc investigation/analysis program is a willful disregard for visitor safety. In effect, such a failure essentially constitutes a conscious and willful decision to repeatedly expose visitors to a known hidden hazard, knowing full well that some of them will become seriously injured and/or drown.

Plan Development

The goal of this step is to develop a plan or method for eliminating or at least minimizing the hazard. When generating or creating a plan, the safety and human factors profession uses a three-level hierarchical process, referred to as the Fundamental Principle of Safety.

The first tier or the best alternative is "Safety by Design". In short, this calls for alternative designs such that either the hazardous condition is eliminated or the user is removed/prohibited from the vicinity of the hazard (i.e. such as prohibiting visitors from venturing outside the inner reef, or swimming/snorkeling any closer than the approach to Witch's Brew). This is the first level of the hierarchical process because it is by far the most effective way of ensuring safety.

If for some reason Safety by Design is not possible or feasible, the second best alternative is "Guarding" or providing a barrier between the user and the potential hazard (i.e. such as the fence on the ledge that restricts access to Witch's Brew by land). However, it must be recognized that this second tier should only be employed when Safety by Design is not a viable alternative because it is not nearly as effective (i.e. the hazard still exists, guards are not fool proof).

The final tier is "Persuasion Control", using warnings, training, or other types of human intervention so as to "persuade" people to behave in a certain manner to ensure user safety. It is noted that for Persuasion Control to be effective it requires, first and foremost active participation on behalf of those who are in control of the hazard (i.e. in this case the City and County of Honolulu), as well as that of the user who is exposed to the hazard (i.e. the visitor to Hanauma Bay). Persuasion Control is the last tier of the hierarchical process because it is known to be limited in its effectiveness.

In this case it is not feasible to have removed the hazard associated with Witch's Brew; thus, the most effective plan would have focused on removing the user or Hanauma Bay visitor from the vicinity of the hazard. In this instance that would mean developing a protocol that would prevent people from accessing Witch's Brew either by land or water. If the City and County of Honolulu determines that this is not a viable option, then in accordance with the Fundamental Principle of Safety, Guarding must be employed (i.e. such as a fence along the ledge to restrict access by land).

If neither Safety by Design or Guarding is implemented, it becomes absolutely mandatory that the City and County of Honolulu develop a scientifically sound Persuasion Control system. Given the known limitation of any such system it is critical that trained professionals take a lead role not only in the development and implementation of such a system, but in its ongoing evaluation and refinements over time. In this instance, the City and County of Honolulu did take steps to implement Guarding with respect to access by land; however, when it came to access by water, only Persuasion Control was implemented and even then the plan was fundamentally flawed in several ways (i.e. see discussions below).

It is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of developing a proper plan to control the hazard as it pertains to the Powell/Laughlin incident. Notwithstanding some of the more salient items include:

1. The key to effective lifeguarding is prevention first, rescue second. Effective prevention includes:
 - a. Site specific training, which was lacking.
 - b. Training regarding site specific hazards, which was lacking.
 - c. Emphasis on hazards that are hidden to the user, which was lacking.
 - d. The 10 second identification and 30 second response time rule (i.e. anyone in distress should be identified and a rescuer should be at their aid within 30 seconds) which was not met, particularly for swimmer/snorkelers in the area of the outer reef, much less Witch's Brew.

2. A lifeguard could have been “stationed” (i.e. on a surfboard, ocean kayak, jet ski, etc.) just outside the reef. Not only would this allow the City and County of Honolulu to have implemented Safety by Design (i.e. prevent access to the hazard), it would have also allowed for quicker response times to individuals needing emergency assistance, particularly those in the more dangerous areas of Hanauma Bay.
3. A powered megaphone/loudspeaker could have been installed to allow for effective and timelier communications/warnings between the lifeguards and swimmer/snorkelers; particularly those in the area of the outer reef and/or in transit to Witch’s Brew.
4. Warning signs could have and should have been posted along the ledge at Witch’s Brew, not only the land based approach, warning swimmer/snorkelers to stay clear of the hazardous ledge. This is critically important in that it is undeniable that some visitors will approach the area by water without having been afforded the opportunity to see the warning signs such as the ones posted on the fence on shore several hundred yards away that prohibit access by land.
5. Buoys could have been installed to mark dangerous areas and to restrict/warn swimmer/snorkelers from leaving the immediate area of the outer reef and traversing the water towards Witch’s Brew.
6. Lifeguard Bregman testified that:
 - a. The lifeguards tell visitors how far they can swim based on conditions; yet, there was no infrastructure/protocol in place to do so.
 - b. If there was a strong current they would tell people not to go beyond the inner reef; however, this was done by posting a sign(s) that said nothing more than “Strong Current”. Clearly the typical visitor/tourist would not know that this means that some arbitrary areas within the bay are dangerous and hence closed.
 - c. In 2002 there were only 4 lifeguards on duty, 2 for each tower; but as discussed below, this was a woefully inadequate and defective plan.
 - d. Each tower was assigned a specific area to monitor so as to reduce the workload for a given tower; yet as noted below this was not carried out.
 - e. The towers did not have visual access to the all of the water/shoreline within Witch’s Brew.
7. Lifeguard Goodwin testified that:
 - a. They try to warn visitors as they can, but there are just too many and hence the lifeguards cannot warn everyone.
 - b. Tower 3A was assigned to monitor Witch’s Brew, but it was approximately 400-500 yards away “as the crow flies” and 500-600 yards away by land (i.e. over ¼ mile). Clearly this is a defective plan, particularly given the 10 second/30 second rule.
 - c. The towers did not have visual access to the all of the water/shoreline within Witch’s Brew.

8. Lifeguard Dorr testified that:
 - a. If a swimmer/snorkeler remains motionless for 30 seconds, then a rescue is initiated. Clearly, given the extremely large ratio of swimmer/snorkelers to lifeguards (i.e. as high as 1 lifeguard for every 500 swimmer/snorkelers), this is an impossible criteria to meet; more importantly, it violates the 10 second/30 second rule discussed above.
 - b. There was no plan nor did they post any warning signs on the beach if an area such as the outer reef or Witch's Brew was closed.
9. Lifeguard Moses testified that:
 - a. As the senior lifeguard at Hanauma Bay he did not believe that having only 4 lifeguards was enough; he noted that the US Lifeguarding Association recommends 1 lifeguard per 50 people.
 - b. Even though the current number of lifeguards on duty has been increased to 6, he still does not believe that is sufficient to safely monitor Hanauma Bay.
 - c. The towers were not assigned specific areas of the bay; when he was on duty in a tower, he would monitor the entire bay. It should be noted that this is contradictory to the testimony by Lifeguard Bregman discussed above. The point to be made is there was a breakdown in the implementation phase that compromised visitor safety.
10. Lifeguard Neves testified that from the towers it is not possible to see the water side of Witch's Brew point.

Implementation

Once the plan is developed, the next step is to communicate the required plan to all relevant employees from the highest supervisory level, all the way down to the employee performing the specific task or duty. Steps must be taken to ensure that the plan is implemented and enforced. Without active enforcement even the best plan becomes ineffective. For example, imagine the chaos that would ensue if there were not enforcement of traffic laws.

Here again, it is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of the implementation phase as it pertains to Powell/Laughlin incident. The more salient items include:

1. The Powell Incident notes that the ocean condition was "rough" at the time of the drowning; thus according to Hanauma Bay protocol, the outer reef area and Witch's Brew should have been closed and no swimmer/snorkelers permitted in the area.
2. Lifeguard Bregman's statement form indicated that the ocean conditions were "rough"; he reiterated this in his deposition, testifying that he told visitors to stay inside the reef.

3. Lifeguard Neves testified that ocean conditions were “rough” on the day of the Powell/Laughlin incident (i.e. the outer reef area should have been closed) and that white water was washing over the ledge at Witch’s Brew.
4. Lifeguard Dorr testified that the ocean was rough on the day of the Powell/Laughlin incident.
5. Ms. Powell testified that:
 - a. During the time she was there at Hanauma Bay there were numerous people snorkeling outside the reef.
 - b. On the way to get lunch at Hanauma Bay, she asked an employee how to swim out to the outer reef.
6. Captain Soo stated that on days when the ledge is fenced off (i.e. Witch’s Brew is closed), such as the day of the Powell/Laughlin incident, the only way to access the area is by water. Yet, from the general area of the main beach (i.e. such as where Mr. Powell and Mr. Laughlin accessed the water), the fence and signs on the ledge that prohibit access to the Witch’s Brew area are not visible/readable. Thus, visitors such as Mr. Powell and Mr. Laughlin would have no way of knowing the area is closed, particularly since there were no warning signs posted in the immediate area of Witch’s Brew (i.e. the location of the hazard).
7. Lifeguard Bregman testified that buoys were supposed to be used to mark rough dangerous areas, but they were not up on the day of the Powell/Laughlin incident.
8. Lifeguard Goodwin testified that:
 - a. If he saw swimmer/snorkelers going to the outer reef when it was closed he would warn them with a megaphone and/or go after them on a board; yet this was not done on the day of the Powell/Laughlin incident.
 - b. If an area was closed (i.e. such as on the day of the Powell/Laughlin incident) a sign would be posted at snorkel rental shop. Not only is there no evidence that this was done on the day of the Powell/Laughlin incident, but this is inherently defective because many visitors bring their own equipment, hence they would never have the opportunity to see such a warning.
9. Lifeguard Moses testified that:
 - a. There was no protocol to post any warning or closed signs at the kiosk or snorkel rental shop if an area was closed.
 - b. He saw either Mr. Powell or Mr. Laughlin swim around Witch’s Brew point yet he took no actions to intervene. It is noted that this is particularly disturbing since not only was Witch’s Brew closed, the entire outer reef was closed. Clearly, Lifeguard Moses, the senior lifeguard on duty at the time, failed in the performance of his duties by not taking immediate action to protect Mr. Powell/Mr. Laughlin from the eminent danger towards which they were swimming.

- c. The buoys that were installed for visitor safety did not last and they were not replaced in a timely manner.

Evaluation

The purpose of this step is to determine the effectiveness of the chosen plan for controlling the identified hazard. In short, “audits” or safety reviews are performed to verify the plan is being properly implemented and enforced. The evaluation process is essential to ensure that the chosen plan is effectively controlling potential hazards and is not introducing any new hazards.

Once again, it is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of the evaluation phase as it pertains to the Powell/Laughlin incident, but the more salient items include:

1. Acting Captain Khrono, who acknowledged that the Witch’s Brew area is dangerous, noted that people are advised not to swim there; however there was no infrastructure/protocol to provide such warnings given the large number of daily visitors (i.e. 1500 to 2000) with only 4 lifeguards.
2. Having only four lifeguards on duty was particularly unsafe given:
 - a. The lifeguards need to take rest breaks, lunch breaks, bathroom breaks and so forth.
 - b. Via the position description for the tower lifeguards, only 42% of their time is spent monitoring the water.
3. Dr. Lukas noted that there are no natural flows or currents from the reef area of Hanauma Bay to directly in front of Witch’s Brew. As such, it would have taken a significant amount of time for Mr. Powell and Mr. Laughlin to swim from the inner reef area, out to the outer reef (i.e. which was allegedly closed on the date of the Powell/Laughlin incident), and then all the way over to Witch’s Brew point. This is particularly noteworthy in that the on duty lifeguards should have had ample opportunity to have observed Mr. Powell and Mr. Laughlin swimming in a dangerous area (i.e. the outer reef) and swimming towards a more dangerous area (i.e. Witch’s Brew) and then intervened.
4. Lifeguard Neves testified that:
 - a. Lifeguard Moses made many suggestions to improve visitor safety and none of them were implemented.
 - b. It was suggested prior to the Powell/Laughlin incident that more lifeguard towers be added to improve visitor safety.
 - c. Even with the current increase to 6 lifeguards, Hanauma Bay is still understaffed.

Documentation

The final step in an effective risk management program is to document the safety process, including the plan, its implementation, and evaluation. Documentation is mandatory to

provide the infrastructure for controlling risks. It is also essential to ensure that there is accountability for the implementation and enforcement of the plan.

Again, it is not the intent of this report to delve into an exhaustive discussion of all the relevant issues of the documentation phase as it pertains to the Powell/Laughlin incident. Some examples where documentation is lacking include:

1. No formalized evaluation of the risks and hazards associated with Hanauma Bay.
2. No documentation of site specific training for the Hanauma Bay lifeguards.
3. No documentation regarding strategies/protocols to be followed by the lifeguards with respect to monitoring the swimmer/snorkelers in Hanauma Bay.
4. No documentation of the protocol to be followed when various ocean/environmental conditions occur and warrant specific proactive safety precautions such as closing the outer reef, Witch's Brew, and so forth.
5. No documentation of what if any signs were posted, where they would be posted, who would post them, and so forth.
6. No documentation regarding post hoc investigations.

CONCLUSIONS

In summary, it is clear that the City and County of Honolulu needlessly exposed Mr. Powell and Mr. Laughlin, as well as any other reasonably prudent patron/visitor to a hazard that was known and preventable to the City and County of Honolulu, but likely hidden from the typical visitor to Hanauma Bay. At the very least, had the City and County of Honolulu had a rudimentary risk management program in effect, the needless and unreasonably dangerous conditions that led to the drowning deaths of both Mr. Powell and Mr. Laughlin would have been mitigated so as to have prevented these needless deaths.

It is particularly noteworthy that the City and County of Honolulu was on notice that Hanauma Bay represented a series drowning hazard to patrons of the park. As discussed above, there had been 7 other drownings in Hanauma Bay in the first half of 2002 prior to the Powell/Laughlin incident; it is unequivocal that the City and County of Honolulu should have developed additional safety measures (i.e. above and beyond those in effect in the first of half of 2002) to control such a deadly hidden hazard. Equally disturbing is the fact that had the City and County of Honolulu's lifeguards on duty on the day of the Powell/Laughlin incident properly implemented the existing safety protocol (i.e. the closing of the outer reef and Witch's Brew) Mr. Powell and Mr. Laughlin would not have drowned. The failure of the City and County of Honolulu to provide a reasonably safe facility was the root cause of Mr. Powell's and Mr. Laughlin's deaths.

It is clear that neither Mr. Powell nor Mr. Laughlin did anything to negligently contribute to their deaths. They were both experienced swimmers and experienced snorkelers, in good health and physical condition. There is no reason to believe that either of them should not have been snorkeling that day; nor is there any reason to believe that either of them knowingly engaged in risky behavior or an unsafe act. Neither of them committed an error of omission nor an error of commission. In short, neither the actions/inactions of Mr. Powell and/or Mr. Laughlin were a contributing factor in their deaths.

Please let me know if you have any questions or if I can be of any further assistance. I look forward to working with you on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard Gill', with a stylized, looping flourish at the end.

Richard Gill, Ph.D., CHFP, CXLT
President and Chief Scientist